Lockheed Aircraft Corp. ~~P.O. Box 105~~ ~~Sun Valley, California~~	Engineering Study [X] Change Proposal [ ]

No.	Date	Affected Activities:
LAC - 1 Rev. #1	3-5-59	[X] WSPO [X] Project

Name of Major Component	Part or Lowest Subassembly	Part No. & Model or Type
Airplane	Autopilot	LEAR

Title of Proposal: AUTOPILOT CONTROL & RELIABILITY

Nature of Proposal:

LAC & LEAR are to instrument an airplane at EAFB for the purpose of determining autopilot malfunctions and fixes for same. This program will involve approximately 10 flights spread over 4 - 6 weeks. Included in the 4 - 6 weeks is one week required by LEAR to calibrate and check their system previous to start of flights.

(cont. attached page)

Reason for Proposal:

In the past four years of flight operation the Lear Autopilot has had inconsistent operating characteristics. The purpose of this study is to find ways and means of improving the autopilot stability and reliability.

We recommended that the following be jointly investigated by LAC and Lear.

STATINTL

(cont. on attached pages)

Estimated Cost and Time Involved Additional Funding Required None — See Cost Recap on Page 2

Estimated Cost for Kits or Parts Additional Funding Required None

Items Affected by Proposal:

[X] Safety [X] Mission Effectiveness [X] Performance

[X] Operating Procedure [ ] Interchangeability [ ] Weight or Weight & Bal. [ ] Tools & Support Equipment

[X] Maintenance Procedure [X] Service Life [X] Pilots Handbook [X] E & M Manual [ ] O'Haul Manual [ ] Parts Catalog

Est. Man/Hrs. Req'd. to Accomplish Change in Field

Source Of Parts For Kit	Availability
Spares Affected	Disposition
Initiated By: LAC	Approved WSPO Project

Nature of Proposal (cont.)

Lear & LAC will have special Trim Servo control, mach amplifier, reworked roll trim servo and engineer ready to start this test on about March 23. Costs of in-plant engineering reworking above units are absorbed by Lear as product improvement. Only cost additional to flight test is Lear field engineer services for test.

~~Current overall flight test man hours and costs will not increase as a result of running these tests.~~

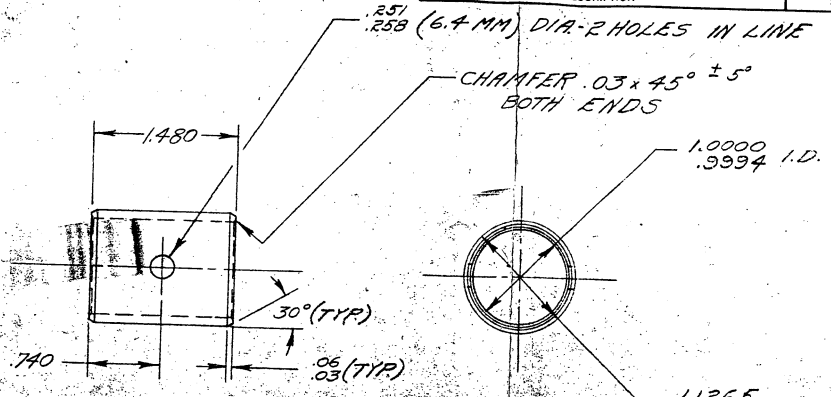
Cost Estimate STATINTL

Lear Cost	
Design Coverage	
Flight Test	
Total	

Authorization required but no additional funding. Present SP-1918 funding seems sufficient to cover these costs. Propose that cost be divided between Customers 1 and 2.

REVISIONS

SYM	DESCRIPTION	SERIAL NO.	DFTMN	CHK	DATE	APPD



NOTE

1. 125 ROUGHNESS - ALL MACH. SURFACES
2. MAKE FROM 1¼ DIA. x 2 8630 STL ROD MIL-S-6050 COND. F-4
3. NO IMPRESSION STAMPING
4. MAGNETICALLY INSPECT
5. CONCENTRICITY TO BE .007 T.I.R. PER INCH OF LARGEST DIA .0003 T.I.R.
6. H.T. 145,000 ULT. 75 PSI

REQD	PART NO.	DESCRIPTION	MATERIAL	SIZE	MATL SPEC	HEAT TREAT OF PART

LIST OF MATERIAL

ODD DASH NUMBER—SHOWN. NEXT HIGHER CONSECUTIVE EVEN DASH NUMBER—OPPOSITE

NEXT ASSY	USED ON	NEXT ASSY	FINAL ASSY
APPLICATION		QTY REQD	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCES ON, FRACTION ±, DECIMAL .X ±, .XX ± .03, .XXX ± .010, ANGLE ±

LAYOUT

MFR AND FINISH PER LOCKHEED PROCESS SPEC 100, CUSTOMER SERVICE SEE DWG 335446.

DATE
DFTMN
CHK
MATL
STRESS R.C. SESSING
SUPV
PRO
PRO
APPD

STATINTL

BUSHING-TAIL GEAR AXLE

STATINTL

LOCKHEED AIRCRAFT CORP.
CALIFORNIA DIVISION
BURBANK, CALIF.

DWG NO. 68KR12-6
SIZE B
FULL
CALC
WT LB

L-177